

The botanical collections of John Buchanan F.L.S.

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Abstract

John Buchanan, artist and botanist, 1819–1898, arrived in Dunedin, New Zealand from Scotland in 1852. Between 1852 and 1862 he was a small farmer, gold prospector as well as a part-time member of the Reconnaissance and Triangulation Surveys of the Province of Otago. In September 1862 he was employed by Dr James Hector as a botanical collector and later as botanist and draughtsman on the Otago Provincial Geological Survey and the Colonial Geological Survey and Museum in Wellington. He retired in 1885 from government service and returned to Dunedin. The plant collections he made over a period of forty years suffered from neglect, resulting in the loss of localized and dated specimens. Buchanan's botanical activities have, therefore, been traced from field notes, letters, ledgers and from his many plant and landscape drawings because some of the published statements concerning his collections have been incorrect or misleading.

John Buchanan, artist and botanist, was born on 13 October 1819, near Dumbarton, Scotland, on the estate of Levenside where his father was apparently a tenant of the Campbells of Stonefield. His childhood was therefore rural and, after attending the parish school, he was apprenticed as a pattern designer in the calico trade at one of the printworks in the Vale of Leven. He later lived in the village of Busby and was employed in the drawing shop of Henry Monteith & Co. where some of Scotland's famous, floral textiles were produced. This was the same firm that trained Walter Fitch, Kew's long serving botanical artist (King 1984). Buchanan's preparation of floral designs led to his desire to study botany. Little is known of Buchanan's botanical activities in Scotland except that he enjoyed the countryside and that he counted as his friends, Roger Hennessy, author of *The Clydesdale Flora*, and John Ross, the Busby doctor who had an interest in ferns and bryophytes.

Buchanan, like many other craftsman and artisans, chose to emigrate when a flood of mass produced textiles caused widespread unemployment in the Glasgow region. He left Scotland in 1851 and arrived in the Scottish Free Church settlement of Dunedin in February 1852 where, on the outskirts of the four year old township, he obtained a ten acre, hillside property in North East Valley.¹ It was in the damp, sunless bush of North East Valley that he began collecting the rich variety of ferns and mosses that grew in profusion on the trees and forest floor.

He made a short and unsuccessful visit to the gold-fields of Victoria, and soon returned to clear and farm his property. In the following years he was employed on the Provincial Reconnaissance Surveys, the Geological Survey of Otago, and from 1865, served the Colonial Museum and Geological Survey for twenty years. He returned to his North East Valley cottage in 1885 where he died on 18 October 1898.² Buchanan was unmarried and his property was left to his brother, Peter, Assistant Government Printer of Sydney, whose

eight children have continued the Buchanan line in Australia (the late David Saunders, pers. comm.).

The purpose of this paper is to examine some of the published statements made by Buchanan himself and those of Sir James Hector, Director of the Colonial Museum and Geological Survey, concerning the botanical collections that Buchanan made during his forty six years' residence in New Zealand. Most of these statements were made long after the events took place, creating a botanical myth. The most important components of the myth are that Buchanan, from the time of his arrival in New Zealand (purportedly in 1849), began sending consignments of specimens to the Royal Botanic Gardens, Kew (K); that these donations led to J. D. Hooker in 1861, recommending Buchanan to Hector as a skilled, local collector suitable for employment on the forthcoming Geological Survey of Otago; that Buchanan had a considerable private herbarium that was deposited in the Otago Museum at the time of his death.

The first of these statements requiring examination is the interview that Buchanan gave to a Dunedin newspaper in 1895.³ He was reported to have arrived in Dunedin on the *Columbus* in 1849. John Buchanan, single, appears on the passenger list of the *Columbus*, not in 1849, but in 1852 on that vessel's first voyage to the colony.¹ Although Buchanan said that he immediately began collecting plants in the vicinity of Dunedin and sent them to 'W. D.' Hooker soon after his arrival in New Zealand, Dr Lauder Lindsay searched the herbarium at Kew and found that no Otago plants had been received between 1852 and 1862. He later wrote that 'several collections [of Otago plants] had been made and sent Home I am aware, but they were lost to science from not having been sent to the proper quarters for utilization.' (Lindsay 1868, p. 7).

As Lindsay had met Buchanan when visiting Otago in the summer of 1861–62, he may have known that Buchanan had sent his parcels of plants not 'to the

proper quarters', but to his old friend, Dr Ross of Busby. Ross's letters to Buchanan acknowledge packets of ferns and mosses received over a decade, some of which he passed on to the bryologist, William Wilson.⁴ Ross considered Buchanan's collections to be important as he wrote in June 1867 on receiving J. D. Hooker's *Handbook of the New Zealand flora* saying 'I am sorry Mr Wilson was unable to undertake the revision of the N.Z. mosses as the Handbook would have been more useful to me and would have done more credit to your discoveries.'⁵ Nothing is known of the fate of the material Buchanan sent to Ross who died in the early 1870s. If Buchanan retained duplicates, they are no longer recognizable except for a single gathering of *Macromitrium* made on Mt Cargill, Dunedin, in 1860.

During his first decade in New Zealand, Buchanan made several journeys into the botanically unknown hinterland of Otago when the Reconnaissance Surveys commenced in 1856. While on the Assistant Surveyor, Alexander Garvie's two major expeditions to the interior of the province in 1857 and 1858, the vegetation was noted as an aid to pastoral settlement.⁶ Buchanan's observations on the unmodified grassland, forest, swamp and scrubland were incorporated in his classic essay, 'Sketch of the botany of Otago' (Buchanan 1869). It is difficult to believe that he did not make full collections on these expeditions, but according to Lindsay only fragmentary collections were made on the overland Reconnaissance Surveys owing to lack of time and materials (Lindsay 1869). If specimens from these inland and the later surveys of the coastal Otago Hundreds have survived, they no longer bear Buchanan's handwriting. It is possible that they have been re-labelled and dispersed in the herbaria of several Otago botanists [e.g. D. Petrie, B. C. Aston, W. Martin and A. Hamilton (WELT)] that contain specimens with the place names of the period, the most frequent being 'Interior of Otago'.

When Buchanan's employment on the surveys ended he was caught up in the gold fever that swept the province in the winter of 1861. His miner's right shows that he was on the rich Tuapeka field between September 1861 and September 1862.⁷ He also prospected further inland on the Manuhēkika River where he had found traces of gold while on the Reconnaissance Survey of 1858. Ross's letters mention plants received from these localities and that he was doing his utmost to further Buchanan's botanical career.

During 1861 it was announced in Britain that Dr James Hector M.D. had been appointed to undertake a geological survey of Otago. By a happy coincidence Ross had a patient who had been a college companion of Hector's in Edinburgh, and who immediately wrote to him on Ross's behalf recommending Buchanan as a prospective plant collector.⁸ Ross also wrote to William Wilson asking him to put forward Buchanan's name to J. D. Hooker.⁹ This Wilson did before Hector's departure for New Zealand. Many years later, on the day of Buchanan's death, Hector was to say that 'Sir Joseph Hooker had asked him to look out for a man named John Buchanan who had sent home to the herbarium at Kew the best collection of plants that were received from Australasia.' (Hector 1898). There were no such collections at Kew prior to Hector's departure from London, nor was Buchanan's name

known to either Hooker or Hector before Ross's letters written on his behalf.

When Hector arrived in Dunedin in April 1862 he began selecting a small staff and in September, only a few weeks after the expiry of his miner's right, Buchanan was employed privately by Hector to collect bryophytes in North East Valley. In a letter to J. D. Hooker, Hector promised large and fully documented collections as soon as he could make Buchanan an official member of his geological survey team.¹⁰ It was the collections that Buchanan made during Hector's two expeditions to the west coast that were so enthusiastically received at Kew. The first of these large collections from the west Otago mountains and lakes was very carefully annotated by Buchanan who also provided water colour studies of some of the alpine species and a vegetation map of the area. Later in 1863 Buchanan again journeyed inland to join Hector on the return voyage of exploration of Fiordland on the schooner *Matilda Hayes*. Although his collections suffered from mould in the constantly damp conditions Buchanan brought back at least six hundred species, including bryophytes.

In his official report Hector stated that 'the two expeditions to the West of the Province had yielded 4,500 specimens' and that, apart from those sent to Kew, a complete set had been retained to form a herbarium for the proposed Otago Museum (Hector 1864, p. 95). This important and substantial collection, as such, has entirely disappeared. It was described five years after Hector and Buchanan had left Dunedin as 'a collection of Lake District and West Coast plants' with 'the rarer plants represented by beautifully prepared specimens.' (Webb 1871, p. 204).

Nothing remains of Buchanan's three years of hard travelling and assiduous collecting, but specimens with the place names used by the Survey and the altitudes that Hector required to be noted have appeared in the herbaria of several botanists (mentioned above) who were in Dunedin in the 1890s. The collection of Otago plants made by Buchanan on the Otago Provincial Geological Surveys remained in Dunedin and was apparently re-labelled and distributed.

When Hector's contract to the Otago Provincial Government ended in 1865 he was appointed to found the Colonial Geological Survey and Museum in Wellington. All his Dunedin staff were transferred to the newly constructed Colonial Museum where Buchanan, as botanist and draughtsman, was responsible for building up the herbarium of indigenous plants. He thereby became the first and only botanist in the Colonial government service. During his twenty years' employment he collected in many parts of New Zealand, including the subantarctic Auckland and Campbell Islands, but not Macquarie Island as has often been stated. Much additional material was supplied by the geological field staff, private botanists and contracted collectors. By 1870, only five years after the Colonial Museum was founded, Thomas Kirk, the country's foremost botanist, referred to its copious herbarium (Kirk 1871).

The history of this herbarium is tragic for, by 1882, Buchanan was to write to T. F. Chceseman, Curator of the Auckland Museum, that 'I had a very good collection at one time, but an herbarium that is open to

general plunder cannot long remain of much value.'¹¹ This attrition appears to have started almost a decade earlier; in 1875 Hector wrote from London to Walter Mantell, who was the Acting-Director, saying that he did not know what Kirk was doing in the herbarium as he had instructed Buchanan to keep the collection out of reach of everyone.¹² Yet Hector himself must have compounded the loss of material in order to maintain exchanges with overseas museums. In the same letter he asked Buchanan 'to look over the collection, take out what will be of use to our herbarium and send the rest to me by post.' He was asking either for specimens from Buchanan's current field work or for material that Kirk had been paid to collect for the Museum. But, whatever appropriations Kirk made on this or other occasions, they were fortunate as he relabelled the specimens and incorporated them in his well maintained herbarium which is now the major source of localized and dated specimens collected by Buchanan.

When Buchanan retired in June 1885 his position was not filled and in the following years the funding of the Museum and its ancillary functions became progressively more inadequate. Kirk's death in 1898 left Wellington without a botanist of note and, by the time Augustus Hamilton succeeded Sir James Hector as Director in 1903, the herbarium was in ruin. Hamilton was to describe to Cheeseman the bad state of the collection and the 'bucketful of grubs' he had swept up in an attempt to salvage the herbarium.¹³

Sixteen years later when Hamilton too had died, Donald Petrie was to add to the myth when he wrote about the Colonial Museum herbarium. He referred to its having been made up of 'the collections of Dr Hector and his assistant John Buchanan that possessed a special value for they contained duplicates of many of the specimens on which Hooker founded new species in working up the Handbook' (Petrie 1919, p. 261).

This was not correct. All the evidence indicates that the duplicates of the specimens sent to Kew from the Otago Geological Survey Expeditions remained in Dunedin. Joseph Hooker himself described to Hector, before the latter left Otago, how he had withdrawn the proofs of the *Handbook of New Zealand flora* in order to include the descriptions of new species and to augment the records of many other plants.¹⁴ Moreover the inventories of the material Hector's staff packed for shipment to Wellington in June 1865 do not include any botanical collections, large or small.¹⁵ In fact Hector expressed concern about the poor storage of the valuable Survey collections, including plant and bird specimens, that had been left in the damp Exhibition building in Dunedin.¹⁶ Petrie was nevertheless correct in describing at some length the neglect of the Colonial Museum herbarium or what, by then, remained of it. He wrote that 'the specimens were not poisoned neither were they kept in boxes or in tightly wrapped parcels. Left lying on loose sheets of paper on open shelving the specimens fell an easy prey to moths and the whole tribe of small, destructive insects. . .' (Petrie 1919, p. 261).

The destruction of the herbarium through the ravages of insects, mice and damp was to continue as the old, wooden Museum became more derelict.¹⁷ Fortunately some tightly wrapped parcels labelled by

Buchanan did survive, indicating that the herbarium had been better curated in his time. Moreover, a Director's report made long before Buchanan retired, mentioned that specimens were being mounted in books (Hector 1873).

This statement is important as it appears to explain the existence of the twenty one guardbooks, known as the Buchanan Herbarium, held by the Otago Museum from 1898 and now deposited by the Trustees of that Museum in the herbarium of the National Museum of New Zealand (WELT). While at the Colonial Museum, Buchanan made up some of these guardbooks in which the plants were mounted in systematic order or, in some instances, by locality e.g. Chatham Islands or Subantarctic Islands. In 1906 Augustus Hamilton informed Cheeseman that he had found 'seven book volumes of Buchanan's plants' in a cupboard.¹³ Only one of these books has survived from the Colonial Museum herbarium, the book of grass specimens that Buchanan nature printed for the folio edition of his *Indigenous grasses of New Zealand* (Buchanan 1877-1880).

The remainder were dismantled and the torn out pages, only recognizable by Buchanan's distinctive handwriting, dispersed throughout the herbarium. Most have the briefest of localities, e.g. Tararua Mts, Nelson, Kawau Is., and few are dated. When he retired to Dunedin, Buchanan was to continue to make up these plant books. Much of the material he used, including type or unique specimens, could only have come from the Colonial Museum, collected, described or recorded while Buchanan was in Government service.

All his work in arranging these plant books was wasted for, although he named the species, he rarely provided a locality or date. For example, of the seventy two separate specimens of native orchids, none are dated and only five are localized. Why he chose to disregard Hector's requirements for well annotated specimens is difficult to understand for, in doing so, he compounded the loss of what was New Zealand's first officially constituted herbarium. For forty years Buchanan served the enthusiastic recipients of New Zealand plants in Britain and carried out Hector's desire to provide the colony with a representative herbarium. He lived to see his efforts fragmented and neglected, but paradoxically, he diminished the value of the very material he saved from destruction by failing to label the collection.

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Notes

1. Report of the arrival of the barque *Columbus* at Port Chalmers. *Otago Witness* 21 February 1852: 2.
2. Register Births, Deaths and Marriages, Dunedin.
3. 'Men of note in Otago.' *Otago Daily Times* 12, 19, 26 September 1895.
4. Letters from J. Ross to Buchanan, dated 9 May, 21 May, 11 June 1860. (Buchanan papers, Mitchell Library; photocopies in Alexander Turnbull Library).
5. Letter from J. Ross to Buchanan, dated 15 June 1867. (Buchanan papers, Mitchell Library).
6. Garvie, A. (1857-1859). Unpubl. 'Journal of a Reconnaissance Survey of part of the Province of Otago. . .' Field books 50B, 51, 69. (Department of Lands: Dunedin).
7. Miner's Right No. 1735 issued to Buchanan for the Tuapeka District from 11 September 1861 to 10 September 1862 (Colonial Museum papers, National Museum, Wellington).
8. Letter from J. Hector to Patrick Graham, dated 25 October 1861 (Buchanan papers, Mitchell Library).
9. Letter from J. Ross to Buchanan, dated 18 November 1861 (Buchanan papers, Mitchell Library).
10. Letter from J. Hector to J. D. Hooker, dated 1 September 1862 (New Zealand Letters, 74: 410-413, Kew archives).
11. Letter from Buchanan to T. F. Cheeseman, dated December 1882 (Cheeseman papers, Auckland Institute and Museum).
12. Letter from J. Hector to W. B. D. Mantell, dated 3 August 1875 (Colonial Museum papers, National Museum, Wellington).
13. Letter from A. Hamilton to T. F. Cheeseman, dated 28 August 1906 (Dominion Museum 06/537, National Museum, Wellington).
14. Letter from J. D. Hooker to J. Hector, dated 18 January 1864 (Colonial Museum papers, National Museum, Wellington).
15. List, R. B. Gore, undated, c. mid. 1865 (Colonial Museum papers, National Museum, Wellington).
16. Letter from J. Hector to the Otago Provincial Secretary, dated 2 September 1866 (Colonial Museum papers, National Museum, Wellington).
17. Letter from J. M. McDonald to G. Ball, dated 10 December 1918 (Dominion Museum 2/4/80, National Museum, Wellington).

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